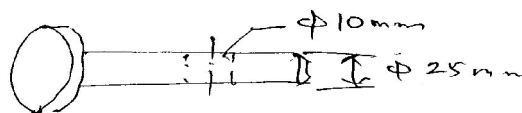# FACULTY OF ENGINEERING

B.E. 4/4 (M/P) I – Semester (Main) Examination, November/December 2012

Subject: Tool Design

Time: 3 Hours   **Max.Marks : 75**

Note: Answer all questions from Part – A. Answer any five questions from Part – B.

PART – A (25 Marks)

1. List the main requirements of cutting tool material.

2. Define the term: Honing and lapping.

3. Mention the merits of broach.

4. Sketch the flat form tools and indicate the various elements.

5. Why is reaming speed slower than drilling speed?

6. What are the major advantages of tap?

7. What is the purpose of pilot? Explain.

8. Differentiate between piercing die and blanking die.

9. What is meant by 3-2-1 principle of location?

10. Explain the importance of clamping force?

PART – B (50 Marks)

11.(a) What is LBM? Explain its principle of operation.

   (b) What are the merits and demerits of ECM process?

12.(a) Sketch single point tool and indicate various tool angles and their function.

   (b) Explain briefly various steps involved in designing of circular form tool.

13.(a) Discuss the influence of tool angles in twist drill.

   (b) Sketch the reamor tool and various nomenclatures and their characteristics / importance.

14.(a) Discuss the design procedure of drawing die.

   (b) Describe various type of cutting operation.

15. Sketch and design a piercing die to make 20 mm diameter part from 1.5 mm thick alloy steel.

16.(a) Explain briefly principle of welding fixture and grinding fixture.

   (b) Explain with neat sketch turn over Jig and clamping Jig.

17.(a) Design a drill Jig to make a hole of ϕ 10 mm for given part.

   (b) Design a drill Jig to make a hole of ϕ 7 mm for given part.

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